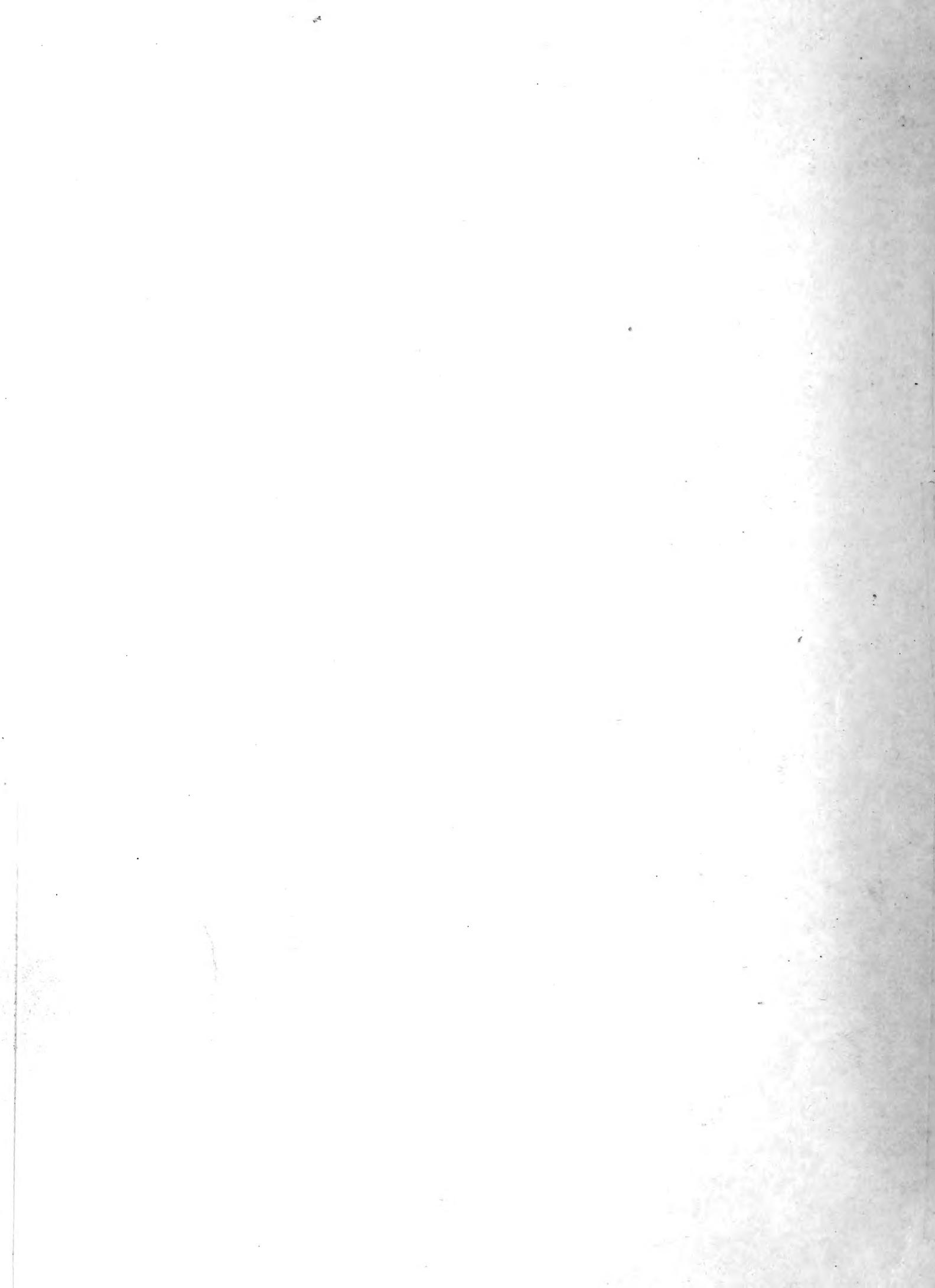
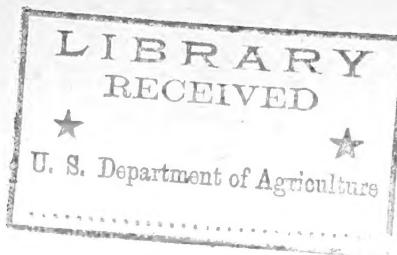


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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY.

U. S. DEPARTMENT OF AGRICULTURE.

Number 15

July, 1915

INSPECTION OF FIELD STATIONS.

Dr. L. O. Howard, Chief of the Bureau of Entomology, is visiting certain field stations of the bureau, especially in the far West.

NEWSPAPER CLIPPINGS WANTED.

Field men should send any and all clippings relating to any forms of insects or insect damage, domestic or foreign, to the chief of the bureau.

There is a small form, on which such clippings should be pasted, which will be furnished the field force upon application. [L. O. H.]

BACK NUMBERS OF PERIODICALS.

It is possible to furnish, in some cases, back numbers of the following periodicals:

Departmental Circular, U. S. Dept. of Agriculture.

Weekly News Letter, U. S. Dept. of Agriculture.

Monthly Letter (Old News Letter), Bureau of Entomology.

(Make application to Editorial Office, Bureau of Entomology.)

NEW PROJECTS.

The following new projects have been approved by the Secretary of Agriculture:

Testing insecticides and material for banding trees. A. F. BURGESS.

Insects affecting tropical and subtropical fruits in greenhouses. E. R. SASSNER.

Investigations of insects affecting trees and ornamental shrubs. A. D. HOPKINS.

Insecticidal constituents of plants. A. L. QUAINTE.

This project will include work on such problems as the preparation of insecticides by synthesis, plant attractiveness to insects, and manufacturing and introduction of plant insecticides.

SUBJECT ASSIGNMENTS.

The Chief of Bureau has approved the report of the Special Committee which recently investigated the several lines of work of more or less doubtful location under the present organization of the bureau. As the result of this study the Chief of Bureau has made the following assignments of subjects:

CHIEF OF BUREAU.

Insects affecting health of man (mosquitoes, house flies, etc.).

Systematic: Scale-insect parasites, especially Aphelininae.

DECIDUOUS-FRUIT INSECT INVESTIGATIONS.

Insects attacking apple, pear, quince, and similar pome fruits, including wild pome fruits.

Insects attacking peach, plum, cherry, and similar stone fruits, including wild stone fruits.

Insects attacking the grape.

Insects attacking cultivated nuts, as pecan, chestnut, walnut, filbert, hazelnut, etc.

Insects attacking cranberry, currants, and gooseberries.

Insects attacking deciduous-fruit nurseries.

Insects of somewhat general food habit assigned to this section are: Cankerworms, apple-tree tent caterpillar, oyster-shell scale, scurfy scale, twig girdler, plum gouger, plum plant lice, European fruit lecanium, and the terrapin scale.

The general subject of spraying machinery.

The general subject of insecticides, including special investigations not directly attached to the work of the several branches, as covered in Dr. Howard's memorandum of April 10, 1915.

Systematic: Work with Aleyrodidae, including care of collection (Quaintance); work with Aphididae, and care of Bureau collection (Baker).

INSECTS AFFECTING CEREAL AND FORAGE CROPS.

Insects affecting, in the field, all cereals, except rice.

Insects affecting all forage crops.

Systematic: Braconidae, special; Ichneumonidae and Chalcididae, incidental (Gahan); Acalyptera and Sarcophagidae (Aldrich); Tachinidae (Walton); Aphididae, special studies (Davis).

SOUTHERN FIELD-CROP INSECT INVESTIGATIONS.

Insects affecting cotton, sugar cane, rice, tobacco (including the cigarette beetle), and peanuts.

Insects attacking domestic animals, including ticks, fleas, horse flies, stable flies, bots, warbles, and lice.

Ants as affecting field crops.

Control of insects by electric means.

Systematic: Weevils and Strepsiptera (Pierce); Thrips (Morgan); Mallophaga (McGregor).

FOREST INSECT INVESTIGATIONS.

Insects affecting forest trees.

Insects affecting forest products.

Insects affecting shade trees and hardy ornamental shrubs.

Phenological questions relating to entomology.

Systematic: Scolytidae (Hopkins); cerambycid larvae (Craighead); termites (Snyder); buprestid larvae (Burke); coleopterous larvae (Böving); sawflies (Rohwer).

TRUCK-CROP AND STORED-PRODUCT INSECT INVESTIGATIONS.

Insects affecting truck crops, including sugar beets, and also mushrooms and other hothouse cultures of truck crops.

Insects affecting small fruits, limited to raspberry, blackberry, and strawberry.

Insects affecting stored products, with the exception of insects injurious to forest products and the cigarette beetle.

Systematic: Sphenophorus (billbugs), Balaninus (nut weevils), Halticini (flea-beetles) (Chittenden); Myriopoda (millipedes, etc.) (Popenoe); Jassoidea (leafhoppers) (Duckett).

TROPICAL AND SUBTROPICAL FRUIT INSECT INVESTIGATIONS.

Insects affecting tropical or subtropical fruits, such as the olive, avocado, mango, pineapple, banana, etc., and Citrus (including orange, grapefruit, tangerine, lime, lemon, etc.).

Insects affecting ornamental plants grown in greenhouses, cold frames, and the home.

Fruit flies, general (excepting specific enemies of deciduous fruits of temperate regions).

Periodical cicada; angleworms.

Systematic: Coccidae, including custodianship of coccid collections.

GIPSY MOTH AND BROWN-TAIL MOTH INVESTIGATIONS.

General, including life-history and food-plant studies, and control by natural enemies, including parasites, predaceous insects, and insect diseases.

Silvicultural control work in cooperation with the Forest Service.

Quarantine work in cooperation with the Federal Horticultural Board, including determination of spread and the inspection and certification of export products.

BEE CULTURE INVESTIGATIONS.

Entire subject of bee culture, with its various subdivisions.

DISALLOWANCE DUE TO LACK OF EVIDENCE.

In explanation of the numerous suspensions being made from reimbursement accounts submitted by field men, an extract from a letter written by the Auditor for the State and Other Departments, Treasury Department, is herewith appended. This letter is self-explanatory and shows the spirit governing suspensions, wherein the evidence submitted by the claimant is not in accordance with the law and regulations in such cases:

You are informed that your claim in the sum of \$3 for reimbursement of expenses incurred on behalf of the Department of Agriculture, Bureau of Plant Industry, has been settled per M. S. and C. Certificate 10254 of this date and disallowed. Your letter of June 21, 1915 (responding to my communication of June 16), in explaining that the procurement of the evidence sought by the auditor would demand more of your time and of the time of others than you deem warranted by the amount involved, together with the closing statement in the letter that you consider the incident as closed, leaves open to the office no other course than disallowance. Federal accounts are audited on the basis of certain well-established requirements as to evidence, the remission of which can not be made to depend upon the convenience of officers or public claimants. It should be understood that the account was open to no other exception than the absence of evidence which is ordinarily obtained with but little effort and that it would, of course, have been the preference of the office to have adjusted the account in your favor upon receipt of the proofs required.

LIBRARY.

MISS MABEL COLCORD, *Librarian.*

NEW BOOKS.

Bestimmungs-Tabellen der europäischen coleopteren. Hft. 73, 74. Paskau, 1915.

BRITTON, N. L. Manual of the flora of the northern States and Canada. Ed. 2, rev. and enl. 1122 p. New York, 1907.

BRUES, C. T. Synonymic catalogue of the dipterous family Phoridae. (Bul. Wisconsin Nat. Hist. Soc., v. 12, p. 85-182, 1915.)

Cattedra ambulante di agricoltura per la Provincia di Messina. Bollettino 4, 8, 10, 11, 14. 1912-13. All on insect enemies of citrous fruits.

JONES, T. H. The sugar-cane weevil root-borer (Diaprepes spengleri L.). San Juan, 1915. 19 p. (Porto Rico Board of Commissioners of Agr. and For., Bul. 14.)

KIES, H. U. Calendar of citrus and olive-tree pests. Los Angeles, 1915. Broadside, 31 by 50½ cm.

McINDOO, N. E. The olfactory sense of Coleoptera. Reprint from Biological Bulletin, v. 28, no. 6, p. 407-460, pl. I-II, June, 1915.

Massachusetts State Forester. Instructions for making improvement thinnings and the management of moth-infested woodlands. By H. O. Cook and P. D. Kneeland, under the direction of F. W. Rane. Boston, 1914. 35 p.

Ontario Bee Keeper's Association. Annual report for 1914. Toronto, 1915. 77 p.

Quebec Society for the protection of plants from insects and fungous diseases. Annual report 7, 1914-15. Quebec, 1915.

Queensland Sugar Experiment Station. Bul. Div. Ent. No. 2, 1914. The cane grubs of Australia. By A. A. Girault and A. P. Dodd.

ROGET, P. M. Thesaurus of English words and phrases. New ed. New York, 1913.

Scientific American cyclopaedia of formulas. New York, 1915.

SHIPLEY, A. E. The minor horrors of war. Ed. 2. London, 1915.

THOMPSON, M. T. An illustrated catalogue of American insect galls. New York, 1915.

WILSON, H. F. Orchard insect pests and methods of control. Orenco, Oregon, 1915.

Zoological record. v. 50, 1913. London, December, 1914.

BEE CULTURE.

E. F. PHILLIPS, *In Charge.*

About 30 members of the Baltimore Beekeepers' Club visited the apiary and laboratory at Drummond, Md., on Saturday afternoon, July 24. Various demonstrations were arranged for them in the apiary.

Dr. A. H. McCray is now stationed at the Drummond laboratory. He is continuing the work of examining samples of diseased brood sent in for determination, and is also taking up

some new lines of disease investigation. Dr. McCray received the degree of doctor of medicine from George Washington University in June.

There will be a conference of apiary inspectors of the Middle West at Keokuk, Iowa, on September 8. On the day preceding there will be a beekeepers' field meeting at the apiary of Mr. C. P. Dadant, editor American Bee Journal, across the river at Hamilton, Ill. These two meetings will bring together beekeepers from all near-by States.

A circuit of beekeepers' meetings is to be held in the Middle West in December, 10 associations meeting in succession. The object of this plan is to enable speakers and exhibitors to attend with the minimum expense and time. Meetings will be held in Ohio, Indiana, Illinois (2), Missouri, Kansas, Iowa, Minnesota, Wisconsin, and Michigan.

CEREAL AND FORAGE INSECT INVESTIGATIONS.

F. M. WEBSTER, *In Charge.*

Mr. C. L. Scott, of the Brownsville, Tex., laboratory, is investigating the spread of the fall army worm (*Laphygma frugiperda*) in Texas and Louisiana.

Mr. Eric S. Cogan, of British South Africa, is employed as a temporary assistant and has been assigned to the Charleston, Mo., laboratory.

Excellent success has been reported from the use of the poisoned bran bait against grasshoppers from the West Springfield, Mass., laboratory, where large areas along the Merrimac and Connecticut Rivers have been cleared of grasshoppers, 95 per cent having been killed at an expense of from 7 to 10 cents per acre. Equally good results have been secured in California by Mr. Urbahns, of the Pasadena laboratory, and also equally satisfactory results have been obtained at Fellsmere, Fla., by Mr. R. N. Wilson, of the Gainesville, Fla., laboratory. These three separate results were obtained from work carried out against entirely different species.

DECIDUOUS-FRUIT INSECT INVESTIGATIONS.

A. L. QUAINTE, *In Charge.*

Dr. A. L. Quaintance recently visited field laboratories at Winchester, Va., North East, Pa., and Benton Harbor, Mich., for the purpose of conferring with men in charge of stations regarding work under way and contemplated.

Mr. V. G. Stevens, of Leland Stanford Junior University, Cal., was appointed as a field assistant for the purpose of assisting Mr. W. M. Davidson at Walnut Creek, Cal., in investigations of the grape Phylloxera.

Mr. Dwight Isely, working on grape insects at North East, Pa., is visiting the Benton Harbor, Mich., laboratory for the purpose of making observations on the grape-berry moth in that region. Upon completion of his investigation he will return to his headquarters at North East, Pa.

FOREST INSECT INVESTIGATIONS.

A. D. HOPKINS, *In Charge.*

Dr. Hopkins's long official title of Entomological Assistant in Charge of Forest Insect Investigations has been changed to the more appropriate title of Forest Entomologist.

Likewise the titles of H. E. Burke, J. M. Miller, Josef Brunner, W. D. Edmonston, T. E. Snyder, F. C. Craighead, and A. B. Champlain are now changed to read Assistant in Forest Entomology.

Similarly, the official titles of S. A. Rohwer, W. S. Fisher, Carl Heinrich, C. T. Greene, and A. G. Böving were changed to Specialist on Forest Hymenoptera, Forest Coleoptera, Forest Lepidoptera, Forest Diptera, and coleopterous larvæ, respectively.

Mr. F. C. Craighead spent about a week in Tyrone, Pa., in the study of insects affecting a plantation of poplar trees and the making of general observations on insects affecting forest and shade trees.

Mr. W. S. Fisher is now at Harrisburg, Pa., where he expects to spend two or three weeks in continuation of investigations on hickory insects with special reference to the hickory bark-beetle, and a general study of forest insects.

Dr. Hopkins went to Kanawha Station, W. Va., on July 29. He expects to remain there about a month in the further study of the forest insect problems enumerated in last month's letter.

Although the *Lyctus* powder-post beetles, and especially their work, are well known, their biology, and particularly their method and place of oviposition, have remained obscure. During the past month Mr. Snyder has concentrated his efforts on securing this information. After considerable painstaking work his efforts were crowned with success. He observed the beetles in the act of oviposition and located the eggs, which he found of unusual type for Coleoptera. He is now working out a full seasonal history of the insect.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS.

W. D. HUNTER, *In Charge*.

Mr. W. D. Pierce spent the latter half of the month in determining the status of the boll weevil in the region first invaded during the fall of 1914, and in visiting the laboratories at Clarksville, New Orleans, Thomasville, and Batesburg.

Mr. G. N. Wolcott, of the Porto Rico Board of Agriculture, was in Washington on July 27. He will attend the meetings at San Francisco and in the fall spend some little time as a collaborator at the laboratory investigating sugar-cane insects at New Orleans.

Mr. R. I. Smith, formerly of the North Carolina Experiment Station, but recently located in Porto Rico, has been appointed a quarantine inspector by the Federal Horticultural Board. He will assume his duties on August 16. He will be stationed at Boston to have supervision over the imports of foreign cotton, and the erection of the fumigating plant which will probably be established at that place by the 1st of January.

Mr. W. D. Hunter visited Boston, Albany, and other points in the northeast in connection with the work of the Horticultural Board during the early part of the month.

Mr. Reuben Cox of the Mississippi Agricultural College has been appointed a temporary field assistant with Mr. D. L. Van Dine on the investigation of malaria mosquitoes.

Mr. A. H. Jennings will be stationed in New York City for some time on mosquito work.

TROPICAL AND SUBTROPICAL INSECT INVESTIGATIONS.

C. L. MARLATT, *In Charge*.

At a recent meeting of the directors of the Florida Citrus Exchange, resolutions heartily indorsing the work against citrus pests, conducted by Mr. W. W. Yothers, of this bureau, were adopted.

Mr. Yothers reports that the groves under his supervision for treatment against citrus pests give promise of a yield equally as good if not better than in 1914, due to following a spraying scheme which he perfected during the past year.

TRUCK CROP AND STORED PRODUCT INSECT INVESTIGATIONS.

F. H. CHITTENDEN, *In Charge.*

An outbreak of unusual severity of the onion thrips was reported in Marshall County, Ind., and vicinity, during July. The localities from which these reports emanated included Donaldson, Grovetown, Hamlet, Walkerton, and Plymouth, and our correspondents stated that the thrips seriously threatened the onion crop over a very considerable acreage.

The Colorado potato beetle, as has previously been announced, has been discovered at work on the Pacific coast in the State of Washington. It has also been known to occur in Idaho for some time and it is invading new territory in Arizona and probably New Mexico. Agents and correspondents are urgently requested to report the occurrence of this species in any suspected new locality.

There has been a severe outbreak of the three-lined blister beetle (*Epicauta lemniscata* Fab.) in Louisiana. It has attacked principally potato and tomato. The first record of its occurrence was on May 17, when the beetles were reported stripping plants in parts of fields of Irish potatoes. On tomatoes they work in the same manner, doing much damage to young plants. At Jeffris they were reported May 21 to be doing great injury. A correspondent wrote that they destroyed acres of potato vines and that no crop resulted and that they were seriously handicapped since unless the insects could be controlled it would be useless to plant Irish potatoes in that vicinity. Mr. Thomas H. Jones reported that the favorite food plant was the spiny amaranth (*Amaranthus spinosus*), and where this weed was growing between the cotton rows it was attacked to a small extent.

The squash ladybird (*Epilachna borealis* Fab.) was reported very injurious during the last week of July to squashes in and near tidewater Virginia, where it has also been rated a pest of great importance in certain years. It will be interesting to know if this species is so injurious elsewhere.

Aphides and flea-beetles have been very destructive in the vicinity of the District of Columbia, Maryland, and Virginia, but owing to adverse weather conditions, especially droughts followed by rain storms, experiments employed to test remedies have been unsatisfactory. Aphides of many species apparently entirely disappeared toward the end of July but some have reappeared in slight numbers. Ladybirds have been extremely active as checks; so much so that there appears to be no food left for them.